

Appl. No.: 10/604,551
Amdt. dated April 7, 2005
Reply to Office action of January 7, 2005

Amendments to the Claims:

Please cancel claims 1-10, 12-22, 24, 25, 28-32, and 34, amend Claims 11, 23, 26, 27, and 33, and add new Claims 35-47 as follows:

Claims 1-10. (canceled).

11. (currently amended) A The label printer of claim 10 for printing on labels spaced longitudinally along a carrier web with each label having a predetermined thickness and a leading edge and a trailing edge, the printer comprising:

a driving mechanism for advancing the carrier web along a media path;

a frame;

a thermal print head assembly supported by the frame, wherein the thermal print head assembly is mounted to the frame for movement toward and away from the carrier web and includes a line of heater elements aligned transverse to the direction of travel of the carrier web;

a bias mechanism urging the print head toward the web so that the heater elements are pressed against the web;

a motion sensor for sensing a displacement of the print head assembly as edges of the labels pass beneath the heater elements; and

a controller responsive to the motion sensor for synchronizing printing with the edges of each label,

wherein the motion sensor is rigidly coupled to the frame at a first end,

wherein the thermal print head is rigidly coupled to a pivot which extends through the frame,

wherein the motion sensor is responsive to angular displacement of the pivot,

wherein the motion sensor is an arrangement including a light emitter and a detector, and;

wherein the light emitter and the detector are separated by a variable area mask coupled to the pivot.

Claims 12-22. (canceled).

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23. (currently amended) A The label printer of claim 22 for printing on labels spaced longitudinally along a carrier web with each label having a predetermined thickness and a leading edge and a trailing edge, said printer comprising:

a driving mechanism for advancing the web along a path;
a frame;
a print head support mounted to said frame for movement toward and away from the web;
a thermal print head carried by said support for movement therewith and including a line of heater elements aligned transverse to the direction of travel of the web;
a bias mechanism urging the print head support toward the web so that the heater elements are pressed against the web;
a motion sensor carried by the support for sensing displacement of the print head as edges of the labels pass beneath the heater elements; and
a controller responsive to the motion sensor for synchronizing printing with the edges of each label,
wherein the motion sensor is rigidly coupled to the frame at a first end,
wherein the print head support is rigidly coupled to a pivot which extends through the frame,
wherein the motion sensor is responsive to angular displacement of the pivot,
wherein the motion sensor is an arrangement including a light emitter and a detector, and;
wherein the light emitter and the detector are separated by a variable area mask coupled to the pivot.

Claims 24-25. (canceled).

26. (currently amended) The printer of claim 25 33, wherein the media has a leading edge, said printer further comprising a controller responsive to the sensor for synchronizing printing with the edge of each media.

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27. (currently amended) The printer of claim 26 33 further comprising a bias mechanism urging the print head toward the web so that the print head is pressed against the web.

Claims 28-32. (canceled).

33. (currently amended) A The printer of claim 32 for printing on media spaced longitudinally along a carrier web having leading edges, the printer comprising:
a driving mechanism for advancing the carrier web along a media path;
a frame;
a print head assembly supported by said frame, the thermal print head assembly mounted for movement toward and away from the carrier web;
a pivot connected to the frame of said print head assembly; and
a sensor for sensing a displacement of the print head assembly as edges of the media pass beneath the print head,
wherein the sensor is a position sensor connected to the frame,
wherein the sensor is an arrangement comprising including a light emitter and a detector;
and
wherein the light emitter and the detector are separated by a variable area mask coupled to the pivot.

34. (canceled).

35. (new) The printer of claim 33 further comprising a bias mechanism urging the print head toward the web so that the print head is pressed against the web.

36. (new) A printer for printing on media spaced longitudinally along a carrier web, the printer comprising:

a driving mechanism for advancing the carrier web along a media path;
a frame;
a print head assembly supported by said frame, the thermal print head assembly mounted for movement toward and away from the carrier web; and

a sensor in communication with said print head assembly for sensing a displacement of the print head assembly due to the passage of the media beneath the print head, wherein the sensor arrangement comprises a light emitter and detector.

37. (new) The printer of claim 36, wherein said position sensor is connected to the frame.

38. (new) The printer of claim 36 further comprising a pivot connected to the frame of said print head assembly.

39. (new) The printer of claim 38, wherein the light emitter and the detector are separated by a variable area mask coupled to the pivot.

40. (new) The printer of claim 36, wherein the media comprises labels adhered to the carrier web and wherein said sensor senses displacement of the print head assembly due to contact of the print head assembly with edges of the labels.

41. (new) The printer of claim 36, wherein the media has a leading edge, said printer further comprising a controller responsive to the sensor for synchronizing printing with the edge of each media.

42. (new) The printer of claim 36 further comprising a bias mechanism urging the print head toward the web so that the print head is pressed against the web.

43. (new) A print head assembly for use in a printer for printing on media spaced longitudinally along a carrier web in the printer, the assembly comprising:

a frame;

a print head for printing on media;

a pivot connecting said print head to said frame, wherein said pivot allows said print head to rotate relative to said frame; and

a sensor comprising a light emitter and detector, said sensor in communication with said print head for sensing a displacement of the print head relative to said frame.

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44. (new) The print head assembly of claim 43, wherein said sensor senses movement of said print head due to passage of media beneath the print head.

45. (new) The print head assembly of claim 43, wherein the media comprises labels adhered to a carrier web and wherein said sensor senses displacement of the print head assembly due to contact of the print head assembly with edges of the labels.

46. (new) The print head assembly of claim 43, wherein the media has a leading edge, said printer further comprising a controller responsive to the sensor for synchronizing printing with the edge of each media.

47. (new) The print head assembly of claim 43 further comprising a bias mechanism urging the print head toward the web so that the print head is pressed against the web.